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A STAR AT THE STUART COURT.

THE Blagges—an ancient Suffolk family—had attained to high consideration as early as the reign of Henry VIII. One who bore the name, with the title of Sir George, was, before his knighthood, which was not conferred till the reign of Edward VI, well known at court, and enjoyed the friendship of the unfortunate Surrey and Sir Thomas Wyatt. Suspected as "a favourer of the gospel"—a title given to such as were on the side of the Reformation in those times of conflict—he

was arrested by the leaders of the popish party and narrowly escaped the stake through the interposition of the capricious monarch. Henry was in the habit of addressing those he liked by some humorous designation, often intensely vulgar. Saluting George Blagge, after he had just missed being burnt, with the odd soubriquet, "*Ah, my pig*"—the courtier replied, "If your majesty had not been better to me than your bishops were, your pig had been roasted ere this time."

One of the descendants of Sir George was Colonel Thomas Blagge, of Horningseaith, in Suffolk,

groom of the bedchamber to Charles I, and governor of Wallingford. He married Mary North, daughter of Sir Robert North, of Mildenhall, in the same county. Report speaks of the husband as of "extraordinary wit and signal loyalty;" and of the wife, as "so eminent in all the virtues and perfections of her sex, that it were hard to say whether were superior, her beauty, wit, or poetry." Stormy were the times, and sadly interrupted must have been the domestic joys of this worthy couple; especially after the death of their royal master and the establishment of the Commonwealth, when to them, as royalists, their path must have been thorny indeed, and the sky of the future all dark.

Three years after the execution of Charles, Mary Blagge, on the 2nd of August, folded in her arms a lovely babe—the fruit of her sorrow, the flower of her hope. She and the colonel gave the girl the name of Margaret, and brought her up with care. "Her extraordinary discernment soon advanced to a great and early sense of religion," which proved her safeguard against the dangers to which she was early exposed; for while yet a child, before her seventh year, she was taken, by the old Duchess of Richmond, into France, and consigned to the care of the Countess of Guildford, a bigoted papist, who tried to persuade the child to go to mass; but she, then so intelligent and religiously disposed, refused to comply, though rudely treated and menaced by the countess, as Margaret in after life used to relate to her friends, with many "pretty circumstances." But she did not stay long in France. On her return to England she lived with her much-loved mother. In 1665 came the raging pestilence, like death on the pale horse, striking terror into the hearts of the Londoners, when Mrs. Blagge, in common with thousands more, hastened from the infected city to the fresh air and the sequestered scenes of the country.

The depression of the royalists had at this time come to an end, Charles had been restored, and Whitehall was once again a scene of cavalier pomp and courtly revelries. As a mark of favour to a family who had suffered in the civil wars, the Duchess of York offered to Mrs. Blagge to take Margaret, now only twelve years old, to place her at court, and make her one of her maids of honour. The proposal, so flattering in a worldly point of view, was accepted, and the young lady soon found herself in a "surprising change of air and a perilous climate."

"A perilous climate," indeed, for the atmosphere was loaded with the pestilence of vice. It would pollute our pages to enter into the details of profligacy and intrigue which filled, to overflowing, the court of the second Charles. Taste, elegance, and wit might throw a veil of fascination over the habits indulged, and screen from general observation a portion of their deformity; but the intrinsic evil of licentiousness will and must remain, however it may wear a fashionable disguise. "The manners of Chesterfield" may be united with "the morals of Rochefoucault;" but whatever some may have smartly said to the contrary, vice can lose nothing of its guilt, though it should part with all its grossness. Margaret, after the pure example and moral instructions of her mother, was shocked at what she saw and heard at court; and the marvel

is how a mother, such as hers, could have trusted one she so much loved in such a furnace of temptation. But there was that in the young girl's heart which kept her amidst the fires. Not long had Margaret Blagge been a maid of honour, when she lost both her mother and her mistress. Among her papers she thus records the bereaving stroke, exhibiting, in instructive contrast, the different manner in which it fell on the sufferers. "My mother dead; at first surprised and very unwilling; she was afterwards resigned; prayed much, had holy things read to her, delighted in heavenly discourse, desired to be dissolved and be with Christ, ended her life cheerfully and without pain, left her family in order, and was much lamented."—"The D— dead; a princess honoured in power, had much wit, much money, much esteem;—none remembered her after one week, none sorry for her, she was lost and flung about, and every one did what they would with that stately carcass. What is this world, what is greatness, what to be esteemed or thought a wit? We shall all be stripped without sense or remembrance. But God, if we serve him in our health, will give us patience in our sickness." Perhaps this twofold stroke of death tended to increase that habitual seriousness which so remarkably distinguished Margaret Blagge, for, as she often said, she loved to be in the house of mourning.

"She had not been above two years at court, before her virtue, beauty, and wit made her to be looked upon as a little miracle; and, indeed, there were some addresses made to her of the greatest persons—not from the attractions of affected charms, for she was ever, at that sprightly and free age, severely careful how she might give the least liberty, which the gallants there do usually assume, of talking with less reserve; nor did this eclipse her pretty humour, which was cheerful and easy amongst those she thought worthy her conversation." Having been promoted to the station of a maid of honour to the queen, the moral perils of her position became still more imminent, but her watchfulness was proportionably great. "Be sure never to talk to the king," she says in her diary; "when they speak filthily, though I be laughed at, look grave, remembering that of Micah, there will come a time when the Lord will bind up his jewels. Before I speak, Lord, assist me; when I pray, Lord, hear me; when I am praised, God humble me; may everything I see instruct me. Lord, cleanse my hands, let my feet tread thy paths."

Providence had in reserve for Margaret two friends, with whom the rest of her history is much bound up; and the attachment she felt for them was, no doubt, among the subsidiary means employed by the divine Keeper of that young soul for the strengthening of her virtue, the growth of her piety, and the establishment of her peace.

The first of these friends—one who became to her a kind of moral and spiritual Mentor—was the well-known John Evelyn, of Wotton, to whose pleasant and easy pen we are indebted for what we know of her history and character. Minding his books and his garden—a circle, he used to say, "big enough for him"—he never sought acquaintanceships at court; and when he heard some distinguishing persons speaking of Margaret Blagge,

he "fancied her some airy thing that had more wit than discretion." But making a visit to Whitehall with Mrs. Evelyn, he fell in with the youthful maid of honour, and one day dined in her apartments, when he "admired her temperance, and took especial notice that however wide or indifferent the subject of their discourse was amongst the rest, she would always divert it to some religious conclusion, and so temper and season her replies, as showed a gracious heart, and that she had a mind wholly taken up with heavenly thoughts." A sincere friendship arose between the Whitehall lady and the Wotton sage, which was ratified by a quaint solemnity, illustrative of the character of the parties far more than the fashion of the times. After a formal solicitation that he would look upon her thenceforth as his child, she took a sheet of paper, upon which Evelyn had been carelessly sketching something in the shape of an altar, and wrote these words:—"Be this a symbol of inviolable friendship: Margaret Blagge, 16th October, 1672;" and underneath, "for my brother E——." There was something of a tinge of romance in the daughter-like attachment which this girl of twenty formed for the amiable Evelyn, but it was indulged for the guidance of her affairs, the increase of her wisdom, and the ripening of her piety. "The most consummate friendships," said he, his heart glowing while he wrote, "are the products of religion and the love of God;" and such, beyond doubt, was the origin of the mutual affection between him and the young lady in queen Catherine's court.

But the quick-sighted Evelyn soon discovered that there was another who held a different place in her heart from that which he had been chosen to occupy; so, after he had rallied her on the subject, Margaret one day sat down in her chamber at Whitehall, and wrote a confidential epistle, in which she communicated to him the attachment which she had formed for him to whom she was subsequently united. The name of this individual the reader will gather as he proceeds with our paper. That his tastes were in unison with her own may be gathered from what she thus writes:—"At first we thought of living always together, and that we should be happy. But at last, he was sent abroad by his majesty and fell sick, which gave me great trouble. I allowed more time for prayer than before I had ever done, and, I thank God, found infinite pleasure in it, and I thought less of foolish things that used to take up my time. Being thus changed myself, and liking it so well, I earnestly begged of God that he would impart the same satisfaction to him I loved. 'Tis done, my friend, 'tis done; and from my soul I am thankful; and though I believe he loves me passionately, yet I am not where I was; my place is filled up with Him who is all in all." She then goes on to say that they were determined not to precipitate their marriage; indeed she indicates some inclination to a perpetual single life, from a mistaken notion that thereby she could more effectually serve her God than in a married state.

Never at home amidst the gaieties of Whitehall, to say nothing of the immorality which there prevailed, Margaret felt, after seven years' continuance in the place, that she could no longer endure to remain amidst its scenes, and therefore earnestly sought, and at length with difficulty obtained, per-

mission from their majesties to retire from court. It was on a Sunday night, Evelyn tells us, after most of the company were departed, that he waited on her down to her chamber, where she was no sooner entered, but, falling on her knees, she blessed God as for a signal deliverance; "she was come," she said, "out of Egypt, and was now in the way to the land of promise." Tears trickled down her cheeks, "like the dew of flowers, making a lovely grief," as she parted with one of the court ladies who had a spirit kindred to her own; but the feelings which predominated in her bosom were more like those of one in earnest fleeing from the city of destruction.

Her new place of abode was Berkeley House, a mansion which stood on the site of the present town residence of the Duke of Devonshire in Piccadilly. There she found a home with the Lady Berkeley, and a pleasant chamber with a library, and quietude and retirement, and, what she specially sought, time for meditation and prayer. She was, however, exposed to occasional interruptions from the visits of distinguished personages, and this owing to her increased love of seclusion, induced her to contemplate a removal into the country. The desire of celibacy at this time returned with increased force; and it is plain, from her whole story, that there was a strong infusion of asceticism in her piety, an element alien from the genuine religion of Christ, which, while it enjoins self-denial, cherishes the social instincts and domestic charities of our nature, purifying and crowning them with divine benedictions. Evelyn had, in this respect, more sober and scriptural notions of Christianity; and he availed himself of his influence over his young friend, to persuade her to renounce those erroneous views of a spiritual life into which (doubtless from want of contact with evangelical teaching, in which the pulpits of that day were often greatly deficient,) she had been betrayed. And he succeeded. She indeed withdrew herself from the amusements of the world of fashion; she burst through the entanglements which continued to surround her even after she ceased to be a maid of honour; she was prepared to give up all for Christ; but she was brought to see that union with one whose religious sentiments and feelings were in harmony with her own, would tend rather to promote than to retard the progress of piety in her soul. Accordingly, she was married privately in the Temple church, on the 16th of May; but in a letter written shortly after, she shewed what was still the main bent and purpose of her mind. "I have this day," she says to Evelyn, "thought your thoughts, wished I dare say your wishes, which were that I might every day sit looser and looser to the things of this world; discerning, as every day I do, the folly and vanity of it; how short all its pleasures, how trifling all its recreations, how false most of its friendships, how transitory everything in it; and, on the contrary, how sweet the service of God, how delightful the meditating on his word, how pleasant the conversation of the faithful, and, above all, how charming prayer, how glorious our hopes, how gracious our God is to all his children, how gentle his corrections, and how frequently, by the invitations of his Spirit, he calls us from our low designs to those great and noble uses of serving him and attaining eternal happiness."

The person to whom she was married, and to whom she had been attached before she became acquainted with Evelyn, was Sidney Godolphin, before his death created Earl of Godolphin.

Berkeley House was the first scene of her wedded life. Sweetly "she lived in retirement all the winter," till the return of Lord Berkeley from Paris obliged her to remove, when she repaired to "a pretty habitation which had been built and accommodated for her in Scotland-yard." A burst of grateful joy went up to her heavenly Father when she found herself settled in her new abode. "When I this day consider my happiness, in having so perfect health of body, cheerfulness of mind, no disturbance from without nor grief within, my time my own, my house quiet, sweet, and pretty, all manner of conveniences for serving God in public and private; how happy in my friends, husband, relations, servants, credit, and none to wait or attend on, but my dear and beloved God, from whom I receive all this; what a melting joy ran through me at the thoughts of all these mercies, and how did I think myself obliged to go to the foot of my Redeemer, and acknowledge my own unworthiness of his favour."

Margaret Godolphin was exemplary as a wife, even as Margaret Blagge had been exemplary in her unmarried estate. Where the religion of Christ dwells in the heart, its developments are beautifully adapted to the circumstances of individual life and the calls of relative duty; like some luxuriant plant which winds, curls, and throws out its tendrils and leaves in directions indicated by the position in which it is placed. With ease she instructed her servants, sedulously maintaining the forms of domestic religion, and breathing, in her whole intercourse with them, its kind, considerate and benignant spirit; while, with the Christian dignity and condescension of the mistress, were blended, in all her conduct towards him she most loved on earth, the devotion, tenderness, and sympathy of the wife. She had learnt the beautiful lesson, that pure and undefiled religion (*i. e.*, religion in its outward service, its external form,) "before God the Father, is this, to visit the fatherless and the widow in their affliction, and to keep ourselves unspotted from the world." In addition to the practical expression of religion in indifference to the world, she cultivated its practical expression in activities for the good of others; passing from the kingly palace, or the mansions of the noble, to the cottages of the humble and the hovels of the most indigent; and visiting and releasing prisoners, of whom Evelyn says he could produce "a list of above thirty, restrained for debts in several prisons, which she paid and compounded for at once." Nor did she omit alms-deeds, while abounding in alms-gifts. She was like Dorcas, who was full of good works; like Priscilla, who instructed many more perfectly in the ways of God; like Mary, who bestowed much labour. She was a servant of the church, a succourer of the saints, a helper in Christ Jesus, and ready to lay down her life for the gospel.

One joy was wanting to crown her wedded bliss, and anxiously she longed for it; not with the impatience, but almost with the intensity of Rachel. "She took home to her a poor orphan girl, whom she tended, instructed, and cherished with the tenderness of a natural mother." Providence at

length crowned her hopes. She anticipated the event with confidence in the Divine power and mercy, but withal with a dash of melancholy, and a foreboding that "she should not outlive the happiness she had so long wished for." A son was born on Tuesday, the 3rd of September, 1678. All went on well for a few days. On the following Saturday, Evelyn received from Mr. Godolphin an alarming note. Dangerous symptoms appeared. All that medical skill could accomplish in those days, and under her circumstances, was done; but in vain. She lingered till Monday, September 9th, when she departed, in the 25th year of her age. She lies buried in Breage church, Cornwall, where her tomb reminds one of the pillar of Rachel's grave.

Such is the simple story of Margaret Godolphin, as told by John Evelyn. It is a quaint but beautiful account of practical piety, with some traits indicative of a want of fuller light and richer knowledge. We must never forget that genuine piety ever springs from a simple reliance upon the Son of God for acceptance with the Father, and the indwelling of the Spirit of grace in the heart, the fountain of all truth, holiness, and love. While noticing, therefore, in the object of our sketch, imperfections arising from the want of advantages now more generally diffused, brightly does the mild star of Margaret Godolphin gleam amid the darkness that envelopes the court of one of England's most degraded monarchs.

CURIOS FACTS RESPECTING THE FLIGHT OF BIRDS.

SWALLOWS fly in the form of a wedge. The leading of the group is confided to a chief, who takes his station at the apex. He yields to another when tired, and goes to the end of one of the lines. It is observed that old and young birds fly in separate companies; and that the old ones return to the place whence they set out, while the young do not. Males and females fly in separate lines, though in the same company. Birds which differ in voice also keep separate lines during their migratory flights. In a flight of bullfinches, for instance, all those having a deep-toned voice fly on one side, while those with high tones fly on the other: birdcatchers are acquainted with this fact. It becomes a question whether these birds are of the same species. It is possible that those with deep voices may have a flat skull, and the others a high one; if so, though the plumage may be the same, they are of different species; and, if put together, would probably not match. Birds generally migrate for the sake of food and climate. Some speculators have said it was from the relation between the magnetism of their bones and that of the earth!

As to the mode of progression, some birds run; others fly; others swim; others walk. Most of them fly; but the cassowary, ostrich, and penguin do not. There is also a rare European bird, called "the great hawk," which does not. Some seabirds become bewildered on land, and seem to lose the power of flight; so that they may be kept without cutting their wings, if distant from the sea. Poultry fly with difficulty; magpies and jays flutter, and fly slowly; pigeons flap their

wings over their head; starlings swim in the air; the kingfisher goes like an arrow; small birds fly in jerks; sky-larks rise and fall perpendicularly; the wood-lark remains poised in the air; geese and cranes adopt figured flights; the cormorant glides over the sea.

The flight of some birds is very rapid. Birds of prey sometimes fly at the rate of sixty miles an hour. In 1828, an experiment was made, in London, with 56 carrier pigeons brought from Liege, and thrown up. One of them (Napoleon) flew the 300 miles in less than six hours; and most of them reached Liege within two hours afterwards. A hawk went 700 miles at 45 miles an hour. A hawk from Fontainbleau was found at Malta next day; and, as it never flies at night, its actual rate of progression, when on the wing, was probably more than 75 miles an hour. At New York, there have been killed birds having in their crops rice which they had obtained in Carolina; so that they had travelled three or four hundred miles in six hours. Their flight is sometimes much assisted by the wind; which, when blowing a hurricane, moves at the rate of from 80 to 100 miles an hour. Mr. Sadler declared that he once travelled in a balloon at the rate of 90 miles an hour, which shows how migratory birds may be carried along.

THE OVERFLOW OF THE DRANSE.

We have already, in a former number, adverted incidentally to this remarkable inundation; and, as the circumstances attending it were of an unusual kind, we are tempted to relate a few of them, thinking they may prove interesting to many, perhaps to most, of our readers. Such of them as have visited Martigny,* as we have done, must have had their curiosity excited, as ours was, by perceiving inscriptions on the walls of several of its houses, noting the height to which THE FLOOD rose in the year 1818. We, therefore, offer the following short account of that watery invasion, in an abridged form, taken from the copious details given of it by Sir Charles Lyell, M. Simond, and the late Captain Basil Hall.

The Val (valley) de Bagnes is one of the largest of the lateral embranchements of the Rhone valley, above the lake of Geneva. Through the valley of Bagnes flows the Dranse, a stream descending from the lofty ice-bound region of Mount St. Bernard. Its bed is, in years when avalanches are very frequent, liable to be encumbered with huge blocks of ice, borne or slid down from the heights above, through the solution of the winter snow by spring or summer heats. Such blocks, when arrested in their gradual descent through renewed congelation, or other causes, cling together suddenly, and form a fixed barrier, serving as an embankment to retain the waters which soon gather behind, the latter made up of the melted snow and ice continually flowing, as the summer season progresses, from the alpine region, below the line of perpetual cold. When the above-mentioned obstruction occurs, the lowermost bed of the

Dranse is, of course, nearly or entirely dry. By-and-by, the mass gives way, either by degrees, which it usually does, or all at once, and, in the latter case, danger becomes extreme to all living things that stand in the way of the deluge which it lets loose. Thus, in the year 1545, a watery avalanche of the Dranse descended, and committed awful ravages, besides drowning or crushing to death 140 persons. Again, in 1597, similar desolation ensued, and 80 people perished. In the next two centuries, a few similar sudden descents of water occurred, but they were attended with little loss of life or property.

"In the spring of 1818," narrates M. Simond, "the previous winter having been very severe, a mass of obstructive ice, of the character already described, and of formidable extent, was collected in the narrowest mountain gorge of the Val de Bagnes; the perilous nature of which struck dismay into the souls of all who beheld it." The Swiss federal government, sharing the alarm of the people of the canton, sent M. Venet, their chief engineer, to examine the nature and extent of the pile, and report what was best to be done. After examination and due consideration, he advised that an artificial passage (*galerie*) should be cut through the mass, upon a plane somewhat higher than the existing level of the waters behind the giant embankment, so as to give time to let the tunnel be formed, without danger to the workpeople; and the waters, meantime, rapidly rising behind, as soon as they reached the orifice of the proposed ice-tunnel would, he observed, necessarily descend, rapidly, but not overwhelmingly. The upper stratum of water thus disposed of, other means were suggested by him to get rid of the lower. The plan was adopted, and M. Escher, a clever young engineer, was employed to put it in execution.

We do not know, from the account given of the operations by M. Simond, what were the exact dimensions of the embankment, or the amount of water behind it, at the time when M. Escher began his labours; but when they were finished, the latter gave the following report of the extent of both. We need hardly premise, that the icy dyke ran across the gorge, from one mountain to the other, each end being firmly *soldered*, as it were, to the opposed shoulder:—

	Feet.
Length along the top, or ridge	680
Breadth, at the base (up and down the pass)	3060
Height, on the lower side	410

The lake behind, when at its greatest height, was nearly 8000 feet long, about 650 broad, and 250 deep, on the average. The greatest quantity of water retained at the time of *tapping* was estimated at 850 millions of cubic feet! all struggling to force a way to a low locality where it could spend itself, and none such being nearer than Lake Leman (full two score miles off); on the way to which it would, if its mass could not be greatly reduced, carry desolation and destruction of life. As the danger was thus imminent to the people, so were their exertions, in forming the gallery, unintermitting. Ruin, even death, stared them in the face; the work, therefore, went on wonderfully, for it stopped neither night nor day. By June 13, the gallery (it was about 700 feet long)

* A small town in the valley of the Upper Rhone, Switzerland, at the confluence of the Dranse and Rhone; which travellers to Italy by the Simplon, or Mount St. Bernard, have to pass through.

was completed, and the water began to flow through it. By this time, the situation of things was alarming in the extreme; several parts of the slippery structure had given way, with a disrupting crash like rending thunder. Each time such things happened, the work-people employed left the work in terror, and ascended the heights for safety. Every house in the Val de Bagnes, and even the dwellings much lower down, upon the line of the dreaded inundation, were now deserted; both people and cattle encamped, for the time, upon the heights.

As we have said, the imprisoned waters were at length allowed to release themselves; the outflow began at 10 P.M. on June 13. About the same hour next night, the level of the lake was found to be lowered one foot; next morning, it had sunk ten feet more; in 24 hours, it was 30 feet lower still. Hopes were now rife, that the whole mass of waters would be harmlessly drawn off; these hopes were scarcely excited, however, before it became plain that, partly from the increase of summer heat, now rapidly dissolving the icy pile, and partly from the warm friction of the descending water, it could not keep together many hours, much less days. Early on the 16th, therefore, the engineer gave notice to the people along the valley, some of whom had descended to their houses to secure valuables, etc., and others of whom were foolishly loitering about their beloved homesteads, to put themselves out of the reach of danger, as a fearful avalanche was momentarily to be expected. Accordingly, the same day (June 16), about half-past four in the afternoon, the dreaded descent took place. Those who saw, those who heard it, never could find fit words to give an adequate idea of the impression it made upon every sense of body and mind. "The torrent let loose, with a roar that stunned the ears of the listeners to a degree which seemed to deprive them of hearing, was fully a hundred feet deep; and, though its earlier course was much obstructed by projections in the mountain gorges (parts of it, also, deviating into lateral gullies, soon to be thrown back again), it yet traversed the first 18 miles in forty minutes; carrying along with it the wrecks of an entire forest, 130 chalets, and a prodigious mass of stones and earth—almost the whole vegetable soil of the land—forming, together with other objects, a *moving mountain*, which the torrent pushed before it with a terrible noise, paralyzing with terror all who heard and saw it in its wild career." Among the latter were two foot-travellers, one an Englishman, who, viewing it from the mountain above, discerned a thick, black vapour rising above all, similar to that attending a great conflagration.

As the passage towards the plains of Martigny widened, so did the avalanche slacken in the rapidity of its descent. The distance between the village of Bagnes and the above-named town is 12 miles; this length it ran in 50 minutes. Never had so unwelcome a visitor entered the place within the memory of man. In an instant it swept away 80 houses, and damaged many more. It had previously caused the death of 9 persons; here, or in the country around, 25 more now perished; making in all 34 who lost their lives: and we should certainly wonder the victims were so few, did we not know that nearly every family, with its live stock,

etc., had had time to get upon the heights. Besides the partial destruction of Martigny—all the remaining buildings of which were filled with mud and wreck—there were washed away, in the country immediately above, 35 dwellings, 8 mills, and 95 barns. These were destroyed within sight of their owners, who could do nothing but look on helplessly and deplore their loss. "Worst of all was it to see plantations, fences, growing crops, yea, the very loans carried away, and the ground struck in an instant with all but cureless sterility."

Reaching the valley of the Rhone, the flood deluged it for many miles, both up and down; viz., on the right, towards Sion; on the left, towards Villeneuve, at the top of the lake of Geneva; visiting Bex, Salines, etc., in its destructive course of 45 miles, which occupied six hours and a half in all. Some bodies of men, who had been drowned above Martigny, were afterwards found, at the distance of about 30 miles, floating on the further side of the lake of Geneva, near Vevey.

"For several months after this debacle," says Sir C. Lyell, "the Dranse, having no settled channel, shifted its position continually from one side to the other of the valley, carrying away newly-erected bridges, undermining houses, and continuing to be charged with as large a quantity of earthy matter as the fluid could hold in suspension. I visited this valley four months after the flood, and was witness to the sweeping away of a bridge, and the undermining of part of a house. The greater part of the ice-barrier was then standing, presenting vertical cliffs 150 feet high, like ravines in the lava-currents of Etna or Auvergne, where they are intersected by rivers." In the latest literary production of Captain Basil Hall, bearing the un-promising title of "*Patchwork*," will be found many interesting notices of the effects produced by the memorable flood of the Dranse in 1818, to which we must refer all inquiring readers.

ROGER PAYNE, THE BOOKBINDER.

The working man of whatever profession, and the employer of working men in any species of industry or handicraft, are too well acquainted with a sort of human paradox who is to be met with every day, and among the members of every working trade. He is an anomalous kind of mystery, for the existence of which it is difficult to account, and he is often found to be an indispensable nuisance whom it is equally impossible to manage or get rid of. We allude to the drunken workman, who, possessing unrivalled skill in his craft, can command employment at almost any price, and who torments his employers while he debases himself by refusing to labour till urged by the pressure of want, or goaded to the task by the pangs of his insatiable thirst for intoxicating liquors. In crafts exclusively ornamental, it will sometimes happen that a certain difficult feat has to be accomplished within a given time, which but one solitary individual has the necessary skill to perform, and he has to be sought for in the haunts of the drunkard, where, perhaps, he will be found stupidly insensible; and has to be taken home, and mechanically sobered through the influence of

drugs, ere he can be set to work. Then, with just one dram of raw spirits to steady his hand, he will work for a few hours in the creation of some exquisite form of wondrous grace and beauty; and with the money thus rapidly earned, will return again, like the dog to his vomit, to the gratification of his hateful propensities. Really the whole history of human wretchedness and perversion does not afford a more melancholy spectacle than this. It is a sacrifice of the noblest gifts of God upon the beastly altar of Belial; an exchange of the golden fruits of paradise for the apples of Sodom; the voluntary abandonment of an honourable pre-eminence, for the sake of a degradation as disgustingly hateful as it is pernicious and destructive.

Sixty years ago the peripatetic observer of life in London streets might have come upon Roger Payne, on some sunshiny day, rearing his grizzled locks and unshaven chin up to the level of the pavement from the cellar in which he wrought in St. Martin's-lane. Roger was one of the class we have described above. He had been reared in poverty, and surrounded by examples of intemperance from early life. He had been apprenticed when a boy to a bookbinder, and followed that business, when he followed any, all his life long. But Providence had endowed him with extraordinary talents; he possessed a pure taste, a rare faculty of invention, and unrivalled ingenuity; and he soon made the discovery that it was in his power to stand alone in his profession, and to control the market by the superiority of his performances. Without money, but strong in the consciousness of his peculiar talent, he withdrew from the workshop and from all intimacy with the comrades of the craft, and established himself in a cellar. Here he wrought in secret, never on any pretence allowing either friend or stranger to witness his operations, or even to get a sight of the implements he used. In order that no one should even guess at the means by which he produced results altogether new in the art which he pursued, he contrived and manufactured his own tools; and he astonished the bookselling world, and rapidly raised a reputation for himself, by the truly marvellous productions of his inexplicable skill. The prices paid to Roger for binding even a single volume were such as had never been dreamed of before, and have hardly been equalled since. There is a copy of "Æschylus," bound by him, in the library of Earl Spencer, for binding which the old earl paid him fifteen guineas. He grew so proud of his popularity that he would rarely work for a bookseller, and never for one who, being also a bookbinder, sought a profit by employing him. He might now have risen to independence had he exercised but a grain of prudence and average industry; but, with his reputation, his laziness and drunkenness increased, and that to such a pitch, that at length it became a sheer impossibility to induce him to work while he had a penny remaining in his pocket. If he bound a volume for ten pounds, a very common price with him, he would first purchase the materials for completing another, and then sally forth to drink up the balance; and vain were any attempts to wile him back to his employment until he had relieved himself of the last shilling.

One consequence of such a mode of doing business was, that this unfortunate man hardly left a tithe of the work behind him, which he would have done had he laboured on soberly in providing a competence for his old age. The books which he bound were mostly scarce and valuable works, and they are to be found, not many of them in public libraries or in the collections of the bibliopolis, but in the cabinets of the titled and the wealthy, where they are garnered as rarities and curiosities. They are remarkable for their chaste and elegant style of adornment, and for such substantial workmanship as seems to bid defiance to time.

A worse consequence of his ill habits to poor Roger himself was, that he lived a life of self-tainted degradation and wretchedness, and died miserably poor. He could earn, with his nondescript tools in his dingy cellar, ten guineas in a few days; but in twenty years of his besotted career he could not lay by as many shillings to purchase a coffin for his haggard remains. With the means of accumulating wealth at his command, he died a pauper; and with talents which, had they been worthily cultivated, would have elevated him to the respect of his fellow-men, he died ignorant of all that it most concerns man to know. He lies in an eleemosynary grave, being charitably buried at the expense of a bookseller of the same name, but who was no relation, for whom he had occasionally wrought. His history is but a type of that of hundreds, nay thousands of others; almost every working man in London could point to a parallel case as coming within his own personal knowledge. Few are they, indeed, who, like the celebrated bookbinder of the last century, achieve a wide reputation, and leave a name in the records of biography; but the number is lamentably great of those who, like him, make their great talents the ministers of their sensual pleasures, and convert the gifts of God, conferred upon them for the advantage of their fellows, to their own destruction.

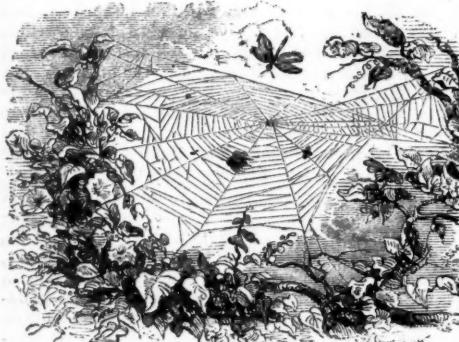
In reference to such characters as poor Roger Payne, there is one remark which it is incumbent upon us to make, and that is, that the estimate which, under some circumstances, such characters are wont to form of their own conduct, and in which the world is too ready to afford them countenance, is radically and altogether false and wrong. If the drunken genius has no wife or family dependent upon him, he will boast of his right to do what he will with his own, and, alleging that he hurts nobody but himself, will disclaim and resent the interference of another. "Poor fellow," says the world, "he hurts nobody but himself; we have no right to intermeddle." This is the very cant of the pit. The companions of such a man have really and truly no right to cease from intermeddling, in any and every practicable way, to prevent the consummation of a ruin so deplorable as the final and everlasting wreck of a man's life on the rocks of drunkenness. And let no clever drunkard lay the flattering unction to his soul, that he hurts nobody but himself; for he teaches—he cannot avoid it—by example, and his example is the very worst, without, perhaps, a single exception, that a man can hold out for the imitation of his erring brother.

THE DISAGREEABLES!

"I DON'T like spiders," said a young female; "I never did: they are such hideous, disgusting-looking creatures, the very idea of them makes me shudder;" and she seemed ready to faint, as a "huntee" ran across the floor. Certainly, the spider is not a creature



which one would desire to have as a near neighbour: it has such a plotting, creeping way, and such a sort of vicious expression about it. We like what is frank and open. In a battle between a spider and a fly, one always sides with the fly; and yet of the two, the latter is certainly the most troublesome insect to man. But the fly is frank and free in all its doings; it seeks its food and pursues its pastime openly; suspicions of others, or covert designs against them, are quite unknown to it, and there is something almost confiding in the way in which it sails around you, when a single stroke of your hand might destroy it. The spider, on the contrary, lives by



snares and plots; and is, at the same time, very designing and suspicious, both cowardly and fierce; it always moves stealthily, as though among enemies, retreating before the least appearance of danger. Its whole appearance corresponds with its character, and it is not surprising, therefore, that while the fly is more mischievous to us than the spider, we yet look upon the former with more favour than the latter.

Nevertheless, perhaps it would be well if all who "creep about this world of ours,"

Tho' uglier than most he be,
Were useful in their kind as he.

The spider has provided the astronomer with his measuring-line. Its web has determined the distances of the heavenly bodies, and by it the movements of what were till lately considered fixed stars have been ascertained. By its agency the comet has been tracked in its wanderings, and it is not too much to assert that it has contributed to the preservation of human life, and that by its slender cord vessels have been turned aside from dangerous rocks. It may be asked, How could the spider's web produce such results? We reply, Inasmuch as it has led to an accuracy of observation which might never have been attained without it. The astronomer must have delicate instruments, the essential feature of which is some means of determining the precise instant when a heavenly body crosses the central line, or axis as it is called, of the telescope. For this purpose, a line of some kind, or, more correctly, a system of lines, must be stretched across the

tube, in or near the focus of the eye-glass, marking precisely the axis of the instrument. A fine thread of silk or linen, or even the finest human hair, or the most delicate wire, is too coarse and uneven for the purpose where great exactness is required. A spider's thread is found to answer perfectly, being exceedingly fine and regular. On a minute examination, a spider will be found to have four protuberances or spinners, furnished with a large number of tubes, from each of which a very slender thread proceeds, which immediately after unites with all the other threads in one. Thus, the proper thread is formed of these four, and these again of a number of smaller threads: and it is calculated that one spider's thread consists of no fewer than 4000 lesser threads! And yet so delicate is it, that the eye cannot detect any coarseness or roughness in it, and it is fitted for the nicest calculations! Hence it is used in nearly all the better class of astronomical instruments; and daily, in various parts of the world, astronomers are watching the passage of the sun, the moon, the planets, and the fixed stars, behind the MAGNIFIED fine spider lines that stretch across the tubes CLAW. of their telescopes. What must be the touch of the claws which guide and arrange these threads as they proceed from the spinners!

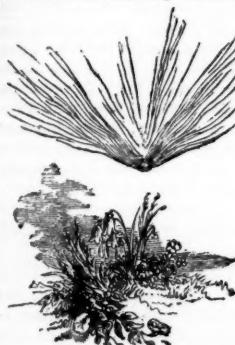
Professor Mitchell, by an invention of his own, has been able to divide a second into a thousand appreciable parts. To do this he converts time into space, seconds into inches, by causing the beats of the clock to be recorded (by means of a little magnetic telegraph) on a revolving disk, so that the distance between the marks thus made represents a second. The instant a star crosses one of the spider lines in the telescope, the observer touches the telescope key with his finger, and thus causes a mark to be made on the same revolving disk. The position of this mark among those made by the beat of the clock, gives the time of the observation, and as its distance from the preceding second's mark can be very accurately measured, the time is obtained with corresponding exactness. The great difficulty in this arrangement was to break and connect the galvanic circuit, at every stroke of the pendulum, by an apparatus so delicate as not to interfere with the regularity of the clock's motions. A very delicate wire lever was constructed, which, by being made to vibrate, alternately broke and completed the circuit. How to connect this with the clock without interfering with its rate of motion, was the next question. A very fine human hair was tried; but it was "too rough, too coarse, too cable-like," to answer the purpose. A fibre of silk was next tried with no better success. At length a spider's thread was selected, and it worked to entire satisfaction. For twenty months that slender line has been moving to and fro in the Cincinnati Observatory, measuring off second after second on the revolving disk, and in this way exhibiting accurately the time of a multitude of astronomical observations, thus connecting, as it were, the heavens and the earth.

Reader, when next thou brushest the cobweb from the wall, or thine eyes light upon the circular webs glittering with pearly dew-drops on the hedge-row and the grass by the way-side, remember what the spider's thread has accomplished.

"But, whatever you may say about the spider's web, there certainly can be nothing interesting in the spider itself." In reply, we shall give a few illustrations of the achievements and in-



genious qualities of this remarkable insect. Mr. Jesse, in his "Country Life," gives an account of a spider which he observed crawling at night over the ceiling of the room in search of flies, which it devoured as it caught them, and appeared, unlike most spiders, to have no place of retreat. During the day, it remained motionless at some spot on the ceiling in the middle of three fine threads which it had thrown out, one end of each of which had its termination at the place where the spider was resting. If one of the threads were ever so slightly touched, the spider instantly disappeared. "I at first thought," says Mr. J., "that it had suddenly let itself fall to the ground, but after a short time I saw it in its original position. On disturbing it a second time, I was enabled to ascertain that by means of its two fore feet, which alone suspended it from one of the threads, the insect spun itself round with so much rapidity as to become perfectly invisible. This lasted for about half a minute, when I again saw the spider hanging on the thread by its two feet. There can, he adds, be no doubt that this power of producing instantaneous concealment must be the means of preserving the spider from becoming a prey to its many enemies, especially as it has no place to which it can retreat as many spiders have." It seems fully aware that its safety depends upon the threads it throws out, which it leaves with reluctance.



THE GOSSAMER SPIDER. These creatures mount to such great altitudes that Dr. Lister, when he ascended York Minster, still saw them floating far above him.

The manoeuvres of the spider to escape from an object surrounded by water are very interesting. Kirby placed a large field spider on a stick in the middle of a vessel of water. The creature, after fastening a thread to the top of the stick, crept down the side till its fore feet touched the water. It then swung itself off the stick which was slightly bent, and ran up the rope it had made; this it repeated several times. At length, it let itself drop from the top of the stick by two threads, each distant from the other about one-twelfth of an inch, guided as usual by one of its hind feet, one of the threads being apparently smaller than the other. Having nearly reached the water, it stopped short, and broke off close to the spinners the smallest thread, which still adhering by the end to the top of the stick floated in the air. Soon after, Kirby discovered one of these threads extending from the top of the stick to a cabinet about eight inches distant—and lo, the spider was gone, having used it as a bridge, over which to escape the watery element.

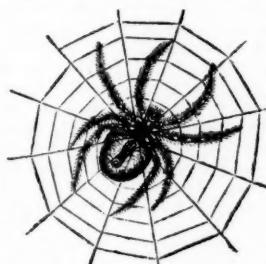
Few facts have more excited our astonishment than the possibility of a man being able to live and move at the bottom of the ocean; this triumph of the diving bell over the unfriendly element was anticipated by

the water-spider. Having first spun some loose threads, and attached them to aquatic plants, it varnishes them over with a glutinous secretion resembling glass. This is its house. It then covers its body with the same substance, and beneath this coating introduces a bubble of air. Thus clothed, like a shining ball of quicksilver, it darts to the bottom, and introduces the air from under its pellicle into its habitation, repeating the operation, till the lighter element excludes the heavier, and an aerial habitation is formed beneath the water. Thence the spider goes in quest of prey, and having obtained it, carries it to its sub-aquatic mansion, where it is devoured at leisure.

"One species of the spider," says Swainson, "closes the entrance of its retreat with a door formed of particles of earth, and closely resembling the surrounding ground. This door, or rather valve, is united by a silken hinge to the entrance, at its upper side, and is so balanced that when pushed up it shuts again by its own weight. In the forests of Brazil we once met with a most interesting little spider, which sheltered itself in the same manner. Its case was suspended in the middle of the web. Upon being disturbed, the little creature ran to it with swiftness. No sooner had it gained its retreat than the door closed, as if by a spring, and left us in silent admiration, too great to allow us to capture the ingenious little creature for our collection."

The house-spider chooses a recess in a corner of a room or a piece of furniture: it then fixes a thread to one side, and carries it, according to the dimensions intended, to the opposite side or point, and fastens it. It then pulls it, and renders it tight; and so goes backwards and forwards several times, in order to make the margin strong, which will have to bear considerable stress. From this margin threads are spun in various directions, and the interstices are filled up as the spider runs along, until the whole assumes the gauze-like texture which we so often admire. The grim artificer then takes up his abode in a chamber constructed in a remote corner, which he connects with the net by "electric wires," which vibrate when booty is within his grasp, and serve as bridges across which he glides to attack his victim.

But the garden, or geometric, spider is more ingenuous than the house-spider. Having first finished the outline of its web, the spider fills it up by lines like the spokes of a wheel. It proceeds to the centre and pulls each thread with its feet, in order to insure proper tension and strength. The concentric circles are next formed. Having completed its work, it runs to the centre and bites off the point at which all the spokes were united, so as to make their security depend on the circular threads, and probably to render the web more elastic. In the circular opening thus made, it takes its station and watches for its prey. But it has always a chamber of retreat where it may lurk unobserved, till the vibration of the threads connected with it indicates that prey has been taken.



GARDEN OR GEOMETRIC SPIDER.

THE OLD TOWN-HALL OF COLOGNE.

AN ILLUSTRATION OF LIFE IN THE MIDDLE AGES.

"THE town-hall is a curious old building," says one of those books of more than European renown—"Murray's Hand-books for Travellers." From this laconic description, we may infer that it remains unseen by many a sight-seeing English traveller, who, after visiting the incomparable cathedral and a few of the most remarkable objects, is doubtless anxious to escape from the odours which come forth in torrents from the black, muddy pools in the gutters. Stirred up by the besoms of maid-servants, these stagnant abominations emit a stench that the hogsheads of Eau de Cologne yearly manufactured in the town would scarcely be able to counteract. The building, too, from its situation, escapes the observation of all but the inquisitive traveller. The upper octagon portion of its tower—the lower part being square—may be seen at a distance, lording it over the crowded masses of brick and slate; but, on a nearer approach, it vanishes from the sight, and some skill is required in threading the labyrinth of narrow lanes and alleys that lead to it.

Let us descend into the streets, and see this "curious old building." Few towns of its size present so animated an appearance as Cologne on a summer's evening. The principal thoroughfares are a complete *multum in parvo* of animal life. Being only just wide enough to admit of one vehicle passing another, the foot-passengers are ever on the *qui vive* to avoid an unpleasant proximity to horses' legs and carriage-wheels, and have acquired a habit of springing aside with an agility which gives an air of great liveliness to the crowded streets. Even where there are few vehicles, the inhabitants are not without practice in jumping, the gutters and crossings in some parts of the town being seldom without the above-mentioned pools. The whole dirt of the town has no other channels by which it can reach its destined reservoir.

Englishmen, of course, are not wanting; and greatly do they add to the variety of the scene. We are now in the Jülich's Platz. See, there is an Englishman standing in the street with a book in his hand. It is "Murray's Hand-book." He is looking round at the four or five "*Plus anciens distillateurs de la véritable Eau de Cologne*," that are within view, in search of the real Simon Pure. He seems a little puzzled, for they are all either *in, by, near or close to*, the Jülich's Platz. He has found it at last, and enters to make his purchases at No. 23, *opposite* the Jülich's Platz. He has been to the cathedral, of course, and to St. Peter's Church, in order to see the celebrated Crucifixion of St. Peter, by Rubens, because Sir Joshua Reynolds went from Dusseldorf to Cologne on purpose to see it; nor has he forgotten the bones of the eleven thousand virgins at St. Ursula's; but he does not go to the Rathhaus, for he only visits what Murray states as especially worth seeing. He would almost rather sleep in the streets than go to an inn not recommended by this infallible guide.

But we must turn down this street to the left; it is called Unter Goldschmid. See, there is another Englishman, with his wife and daughter. The young lady is inquiring her way to the cathe-

dral, and the stout old gentleman seems not a little annoyed that she can neither understand, nor make herself understood, which he thinks very strange, considering the sums he has paid Herr Hermann Lövenmuth for private German lessons for her. He is evidently one of those who have always "no time to lose," and he would not be able to see the Rathhaus even if he knew of it and wished to see it. Cologne to-day, Bonn to-morrow, Coblenz the next day, and so on till he arrives again at that celebrated starting-place for continental travellers—Cornhill.

One more turn to the right, down this narrow alley, and we arrive at a large open court, called the Rathaus Platz, where the eye at once falls upon the beautiful marble portal, which every connoisseur must recognise as a master-piece of architecture. It consists of a double arcade, one above the other, the upper one being in the Roman style, the under one in the Corinthian. On the space between the arcades are three tablets with bas-reliefs. To the left is Samson in the act of tearing asunder the jaws of the lion; to the right, Daniel in the lion's den; and in the middle, the redoubtable knight, Hermann Gryn, burgomaster of Cologne, in the act of plunging his sword into the breast of a lion, his left arm, protected by his cloak, being thrust into the animal's mouth. Some inquirers into the authenticity of legends have dared to doubt that the incident here recorded in stone ever took place, but apparently without sufficient grounds; for it is neither impossible nor improbable, and it is recorded by the old chronicles of the city. Be this as it may, the inhabitants of Cologne have ever shown themselves too faithful believers in more extraordinary events than this, not to put implicit faith in every word related by the chronicler.

The interior of the Rathaus presents but little to interest the stranger. In the ante-room of the council chamber are allegorical pictures, representing different epochs in the history of Cologne, the figures being clad in the costume of the painter's time. In the simple council chamber are to be seen the words, "Hear the other side also;" which seem to have had little influence on the judges who distributed there but too often a one-sided justice.

The incident which we have more particularly undertaken to record happened about the middle of the thirteenth century, in the palmiest days of Cologne, then, perhaps, the first city of Germany, not excepting even Vienna. It contained 150,000 inhabitants, and, upon an emergency, could send 30,000 fighting men into the field. It was the great mart of commerce for the centre and north of Europe, and not the least important town of the great Hanseatic league, which it joined in 1201. In London, it possessed Whitehall, which was the dépôt of its wares and manufactures. An idea of the extent of the latter may be gained from the fact that, at about the time we speak of, 80,000 looms were in activity, and it is recorded of the authorities that, in order to punish the weavers for their participation in a rebellion, 17,000 looms were destroyed at one time, a devastation which laid the foundation of the manufacturing greatness of Elberfeld and several of the adjacent towns. "Commerce was the watchword of our forefathers," says a Cologne writer.

But not less celebrated at that time was Cologne as the principal residence of the Christian Metropolitans, whose diocese extended over the whole domain of the Rhine between the Scheldt, the Meuse, and the Weser. Its religious establishments equalled in number the days of the year, and obtained for it the appellation of the Rome of the North. At that time, too, the appearance of the town itself may have justified the old saying,

Coolen ein kroin,
Boven allen steden schoin.

Cologne a crown,
Fair 'bove every town.

But the modern traveller who should agree with this adage, must possess an original, at least, if not a very eccentric, taste.

Cologne was also the cradle of learning and the fine arts, the seat of the oldest university in Germany, and now—"oh what a falling off is there!" To what a degraded state did hatred of innovation, intolerance, misunderstood freedom, prejudice, and priestly domination, reduce it in the course of a few centuries. Its manufactures transferred to Elberfeld, Solingen, Crefeld, and other towns; its fine arts to Dusseldorf; groaning under the burden of an idle priesthood, Cologne at one period of the last century contained scarcely as many inhabitants as it had once sent soldiers to the battle-field.

"In 1248," says the chronicle, "Conrad von Hochstetten, rich beyond measure in gold, silver, and precious stones, so that he thought his treasures inexhaustible, began the great, costly cathedral, which is still building in this the year of our Lord 1499." He was followed on the episcopal throne, in 1261, by his nephew, Engelbert von Falkenburg, in whose reign flourished the renowned burgomaster of Cologne, Hermann Gryn. Conrad von Hochstetten was at constant war with the citizens of Cologne. This war had arisen respecting the coinage of money; but under him and the two following bishops it became for the burghers a war of liberty, and bravely, indeed, did the warlike inhabitants defend themselves against their powerful and despotic spiritual rulers.

A few years after his accession to the throne, Engelbert besieged Cologne with a large army; but the Bishop of Liege, and his brother, Count Otto of Guelders, endeavoured to make peace. After some parley, it was agreed that the town should pay the bishop six thousand marks, and that the latter should take oath to preserve the freedom and immunities of the city as prescribed by the laws of the empire, and confirmed by the emperor's seal.

"Though it is difficult for me," said the Bishop of Liege, "I will nevertheless faithfully keep my word;" and he did keep it until he found a favourable opportunity of breaking it. It was during this temporary reconciliation that the crafty bishop be思ought him of a plan to get rid of his most inveterate and formidable enemy, the burgomaster, Hermann Gryn.

Gryn was not, like modern municipal rulers, influential only at the council-board; he was a knight, and as valiant in the field as a lion. None had ever stood up so boldly to defend the rights of the citizens against the wiles and treachery of an

aspiring priesthood. Hence Gryn was beloved by his fellow citizens; and, when the halberdiers of the bishop would, with a look of contempt, rudely push aside the peaceful citizens, and call to them to make way, many a tongue whispered with suppressed anger, "Take care, ye haughty despisers of the people! The tables may turn! We still have a Gryn to defend our rights!"

Wild beasts were sometimes transmitted, as presents, in the middle ages. The bishop had lately received a lion, which he gave in charge to two of the prelates of his cathedral to keep and feed for him. He instructed them to let the beast fast for several days, that hunger might make him furious, and appointed a day on which they were to invite Gryn to a banquet, as a token that the recent reconciliation between the superiors of the church and the citizens was sincere. The two worthy servants of such a master faithfully executed his instructions, which they did the more readily as they bore personal hatred to Gryn, who was always opposing difficulties in their way when they had to execute the orders of their superior.

Gryn was an honest man as well as a brave one; he, therefore, suspected no treason, and readily accepted the invitation. When the appointed hour arrived, he donned his large heavy bonnet, with its long plume, girded his short sword on his side, drew on his stout leather gloves, threw his long purple mantle over his shoulders, and descended into the street. His tall, noble figure was soon recognised by the honest burghers. Their good wives, too, as they caught a glimpse of him through the shop windows, ran to the door to have a longer look at his receding form; and happy did he deem himself who was able to meet him, and, in answer to the doffed cap, obtain a smile from that noble and honest countenance. Some of them followed him even to the house of the prelates, and left him only when, in answer to his loud knock at the portal, the door was opened by a monk, and the worthy burgomaster disappeared from their view.

He was ushered into the presence of the prelates, who received him with gracious smiles.

"Welcome, worshipful Herr Burgomaster," said the one. "Thanks for this joyful meeting, which is a guarantee for the long duration of peace and concord in our holy city."

"Amen," responded the burgomaster, sturdily; "these brawls and fightings do indeed destroy our commerce and ruin the prosperity of our citizens."

"As long as the worthy knight and burgomaster Hermann Gryn holds temporal sway over the faithful burghers of our city, we need be in no fear that they will revolt against their spiritual ruler, and refuse the fulfilment of the promises they have sworn to perform."

"That they never will, reverend father," answered the burgomaster, "so long as you, on your part, overstep not the bounds which you also have sworn to preserve."

The prelate bit his lip; and had the unsuspecting knight seen the expression of hate which lighted up the eye of his host, he might have felt that treason was lurking beneath it.

"Your worship has doubtless heard of the noble lion which we have here," said the priest; "a noble

animal it is, from Africa; a present to our noble master, the archbishop. Ere we conduct you to the festive board, do us the honour to accompany us, and see the noble beast."

"Willingly; lead on, reverend sirs," said the knight.

The prelates led the way across the hall to an inner apartment.

"One more room—there, that is the door," said one of his conductors. Then motioning the knight to enter, he added—"The animal is chained; enter without fear."

As the knight opened the door, one of these holy fathers of the infallible church gave him a violent push that sent him headlong into the room. The door closed, the key turned in the lock, and the loud laugh of the prelates revealed to the knight the treason that had been practised on him. With a terrific roar, that would have cowed a less stout heart than Gryn's, the lion sprang up. The knight had scarcely time to raise himself. Holding his huge bonnet in his left hand, with the rapidity of lightning he loosed his mantle from his shoulders, and, with a sudden whirl, wound it round his left arm, drawing at the same time with his right hand his short stout broadsword. He had scarcely time to prepare before the savage beast was upon him. Thrusting his left arm, thus protected with his bonnet and cloak, into the lion's mouth, he plunged his sword into the animal's breast, and laid him dead at his feet.

"Ye knavish priests," he murmured between his teeth, as he gazed at the dead animal at his feet, "ye shall reap your reward for this."

The lock of the door soon gave way before his nervous arm; and, before the inmates of the house had time to discover the ill success of their machinations, the bold burgomaster was in the street.

History seldom records a quicker act of retribution than now followed. In less than half an hour after his escape, the two prelates were hanging by the neck from the beams of the cathedral cloister door, which from that hour was called the Pfaffen-pforte, or gate of the priest.

"There let them hang," said Gryn, "as a warning to all those who may meditate acts of treachery against the brave citizens of Cologne."

But, alas! priestly treachery and ambition still remained the order of the day.

Bishop Engelbert broke his vows, made new ones, violated them again, and never ceased oppressing the citizens till death put an end to his career.

In memory of the above recorded event, a representation of Gryn, in the act of stabbing the lion, was placed over the entrance gate of the Rathhaus, but it has since been renewed, for the present tablet is of comparatively modern date.

ROYAL NAVY OF ENGLAND.

Not till the time of Henry the Seventh was there a standing army maintained in England; and even during that reign (a great epoch in our history), it was very small. The rise of a permanent navy dates from the same time. In the year 1485, the Great Harry was built and equipped, at a cost

of 14,000*l.*—a large sum, differences of past and present money values considered. This father of our navy was burnt by accident in 1554. Henry the Eighth caused to be built, as soon as he ascended the throne, in 1509, a royal armed ship of 1000 tons. In 1512, when he invaded France in person, with a great army, making his queen Catherine regent of the kingdom in his absence, he named the new ship the Regent, in honour of her. The vessel was as luckless as its godmother, for it was burnt in a naval combat in August of that year. Henry allowed but 5*s.* a month to his seamen; Elizabeth raised the pay of all able mariners in the royal service to 10*s.* a month.

With the exception of the above-named two great ships, and a few smaller royal vessels, when a fleet was equipped to protect native, or assail foreign coasts, the vessels were hired from merchants, and temporarily armed, either at government or private cost. But in 1512, a navy board was constituted by Henry the Eighth, with orders to equip and maintain a number of "stout ships of war." By the year 1521, the royal navy consisted of 16 ships of 7260 united tonnage. Laws were now made for planting and preserving timber in the national demesnes. Dock-yards were laid out at Deptford, Woolwich, and Portsmouth; and the Trinity House was founded. At the death of Henry the Eighth, in 1547, the royal navy numbered 24 ships of 12,445 united tonnage. Till after the close of the sixteenth century, the progress of increase was slow, as the following data prove:—In the time of

	Year.	Vessels.	Tons.	Guns.	Men.
Edward VI.	1548	53	11,268
Mary	1553	24	7,110
	1565	29	10,506	...	6,570
Elizabeth.	1588	34	12,590	...	6,279
	1599	42
	1602	42	17,055	...	8,316

During the latter reign the average cost of the navy was about £30,000 a year.

James I. . 1607 36 14,710 ... 8,174
Annual expense, £50,000, exclusive of timber from the royal forests, £36,000 per annum.

Charles I. . 1633 50 23,695 1,434 9,470
Commonwealth { 1652 102 ... 4,390 21,910
1658 157 ... about

Charles II. . 1660 154 57,463 5,000 30,000
Expenses per annum, £500,000.

James II. . 1688 173 101,892 6,930 42,003
Anne . 1702 272 159,020 about 50,000

Navy estimates of this year, £1,056,915.

George I. . 1724 233 170,862
George II. . 1753 291 234,924
George III. . 1760 412 321,104

This year, the first of this king, 70,000 men were voted; estimates £3,227,143.

The rate of increase after this time was enormous. In 1814 (the last of the general war, saving the short fit of "the hundred days," in 1815), the estimates had risen to 18,786,509*l.*; and there were afloat 901 ships, etc., of which number 177 were of the line. Between the years 1802 and 1814 inclusive, our navy had taken or destroyed 569 of our enemies' vessels, great and small; 83 of them being line-of-battle ships.

HINTS ABOUT TIMETHRIFT.

It is a common remark that time flies, and ought to be improved. We fear, however, that few who make the observation are really aware how much it involves, and how far they themselves come short of it. Most persons do not rightly estimate the worth of the smaller fragments of their time. They have large ideas of what may be accomplished in years and months, but of the value of minutes, or even hours, they seem unconscious. Yet it is only by diligently seizing and employing these, that we can secure from waste the longer periods. Why is this truth so often and so strangely overlooked? That it is so, is obvious, whatever be the cause. Many people act as though it had never occurred to them that life is made up of days, and days of moments. They are, perhaps, not chargeable with gross indolence, or habitual neglect of duty. But in the intervals of needful occupation they loiter, dream, or trifle; and, at the close of the year, wondering they have done so little, and failed to accomplish so many of their plans, they complain of the shortness of time, the multiplicity of their engagements, or the peculiar hindrances they have sustained; in short, throw the blame on anything or anybody rather than themselves. Might not this be prevented? We think it might, and will try to show wherein, as we suppose, the fault consists. Take one or two familiar cases.

A weary merchant, who at seven o'clock has returned from his desk and counting-house in the city, to a comfortable villa at Brixton or Highgate, exclaims, as he throws himself upon his sofa:—“Well, I wish I had done with the drudgery of accounts; I have no time for self-improvement, or doing good to others; all my energies seem absorbed in money-getting.”

“Surely, my dear,” replies his wife, “you are not so badly off in this respect after all; you have several hours in the evening.”

“Yes, but what are they worth when one is tired and harassed with a day's fag at office? Those who can command all their time may accomplish almost what they will; but what can a man do who has only an hour or two at night, and part of that time taken up with meals and chit-chat?”

While this worthy man is thus complaining, he might be reading to his wife a chapter in some interesting book; writing a letter to a friend; performing, if he have a talent that way, some little piece of handicraft skill; or giving his children some pleasant and familiar lesson, which would increase their stock of knowledge, and draw out more strongly their affections towards himself.

Take another illustration. A young wife and mother, amiable and kind, but not particularly thoughtful, is really sorry that when her husband returns home in the evening, he should so often have to complain of the disorder of the house; of the perverseness of the two children, who seem to set parental authority at defiance; and of her own inability, from family cares, to comply with his wishes for a little reading or music. Her sister, however, with three times as many children, and who, perhaps, if in that station of life, often lends a hand in the shop besides, manages to get through her day's work in half the time. This excites Lucy's astonishment, and prompts the query,

“What can be the reason, Jane, that with all you have upon your hands, you never seem in confusion, and manage reading, and many other things for which I never have the time. I wish you would teach me your secret.”

“Really, Lucy,” is the smiling answer, “I am no such prodigy. My secret is soon told. You can try it, if you please, and with as much success. When I rise in the morning, knowing I have certain duties before me which *must* be done, I try to put these in the best order, and keep for the intervals of leisure which are sure to occur, those other matters which I should *like* to accomplish; such as reading, writing, a call of charity, or a visit to a friend. By this means, and by taking that first which is most pressing, or best fits in with the space at command, I contrive to keep my children and household in order, and when the day's work is over, to enjoy a quiet evening with my husband.”

The case of these sisters is, we apprehend, a common one.

It is a proverb in respect of money matters, that if we take care of the pence, the pounds will take care of themselves; and a similar maxim will hold good in regard to our economy of time. The best mode of ensuring this economy is to do our daily work on system. Those men of business accomplish most who have a plan for the regular performance of their various duties, and who never deviate from it, except on occasions of emergency. So important is this habit, that it is hard to say in what sphere or occupation its value is most deeply felt. By adopting and adhering to it we *fill up* our working time, so as almost entirely to preclude those brief intervals of cessation which most people find so difficult to improve. Nobody is kept waiting for us, or keeps us waiting; and another consequence of this is, that our work is sooner done, and our leisure, when it comes, is continuous. The pleasure experienced by persons who thus fulfil their appointed daily tasks can hardly be conceived by those who have no method in their business, or who go about it lazily and with half a heart. These people are always behind-hand, and always in confusion, their work is never done, and the intervals they have in it run to absolute and total waste. It may be noted too, that those who are methodical and diligent in their *work*, properly so called, will be equally so in the improvement of their leisure. The man who, in his counting-house, is prompt and active, will accomplish more in his library or study, than another who in his office engagements is remiss and negligent of rule and system. A shopkeeper, who sticks closely to his business in the day, will, of an evening, find opportunity not only for air and exercise, but for some degree of mental cultivation and enjoyment. The prudent housewife will get through a course of pleasant and instructive reading, and the careful servant find time for correspondence with her friends; whilst all these classes will be enabled to perform occasional works of benevolence, and do kindly offices for such as need them. There are, however, some occupations which leave a man no fixed portion of the day at his own disposal. Physicians, lawyers, ministers, men filling high public stations, and many others, are liable, at all hours, to the calls of professional or official duty. If such

persons know not how to improve the "intervals" before mentioned, or to profit by their odds and ends of leisure, they will have no time at all for themselves; and this habit to them, therefore, becomes of augmented and incalculable value. Without it, they must remain, to a great extent, ignorant of every thing unconnected with their personal callings, or should their minds have been previously stored with general knowledge, it will grow rusty from want of use.

These remarks are general, and, therefore, of universal application. They have, however, a special significance and force in regard to those whom a laudable ambition prompts to rise in society, or in some special and important capacity to serve their day and generation. Such aspirants should remember that "the hand of the diligent maketh rich," and that all really great men—all who have made large discoveries in science, acquired high reputation as profound thinkers and writers, cut a figure in the political world, or achieved great things in the cause of philanthropy—have been rigid economists of time. Conscious of the brevity of life, they have felt the worth of every hour, and endeavoured to produce from each, as it passed, some practical and lasting fruit. They have contrived, and methodized, and planned, so as to make the most of every day. Apart from such habits of mind and conduct, they could scarcely have risen above men of mere ordinary mental powers. Without diligence and application—the sedulous improvement of their gifts—those gifts would have done little, either for them or for ourselves. The world would never have been enriched by the sublime discoveries of Newton, profited from the vigorous reasoning of Locke, or blessed by the glorious results of the labours of Wilberforce and Clarkson. Certainly, if energetic and persevering industry be requisite for men in private stations, it is doubly so for those who seek in any way to benefit society at large. It behoves all such to recollect that however they may concentrate their energies on some single point, they have yet much to do, and but little time in which to do it; that they must, therefore, employ almost the whole of that time, and so arrange it as to make the most of every part. Two examples of eminent men who acted on this conviction, and thus attained to usefulness and fame, will conclude our article.

Sir William Herschel, the celebrated astronomer, having been brought up as a musician, was, when a young man, organist of the Octagon chapel, Bath. Most persons would suppose that with the duties of his office, besides engagements at public and private concerts, and the daily instruction of a number of pupils, his time must have been fully occupied, or, at least, that all the spare moments he might secure would barely suffice for recreation. He, however, contrived whilst thus engaged to make himself master of the Italian and Latin languages, and to acquire some knowledge of the Greek. He then turned his attention to mathematics, optics, and astronomy. After a fatiguing day's work of fourteen or sixteen hours with his pupils, he would, on returning home, apply, for relaxation, to what would generally be supposed these severer exercises. As his interest in these studies increased, he resolved to explore the heavens for himself, and for that purpose to procure a

Gregorian telescope. The price, however, being more than he could afford, he determined to make one, and, after innumerable difficulties, succeeded. From this period, all his leisure was devoted to those pursuits and discoveries by which he gained his reputation. He became a first-rate constructor of telescopes, and in fashioning the mirrors for these instruments, his industry and perseverance were extraordinary. It is stated by Mr. Craig, that for his seven feet reflector, he actually finished and made trial of no fewer than 200 mirrors before he found one that gave him satisfaction; and that when he sat down to prepare a mirror, his practice was to work at it for twelve or fourteen hours without quitting his occupation for a moment. He would not even take his hand from what he was about to help himself to food; and the little that he ate on such occasions was put into his mouth by his sister. It was only by continuance in such indefatigable habits, that he achieved his well-earned fame.

Benjamin Franklin, the well-known philosopher and statesman, is another remarkable instance of the results of untiring energy, industry, and activity of mind, in raising a man from the lowest poverty and obscurity to affluence and distinction; and this in so striking a manner, that there is no instance of any one, the close of whose career presents so great a contrast to its beginning. When apprenticed to a printer at Boston, he adopted, for cheapness' sake, a vegetable diet. This enabled him to purchase books for self-improvement, and while his fellow-workmen left the shop for meals, he remained, and having despatched his light repast, had the rest of the time, till their return, for study; "in which," says he, "I made the greater progress, from that greater clearness of head, and quicker apprehension, which generally attend temperance in eating and drinking." His business procured him the acquaintance of some booksellers' apprentices, of whom he would often borrow a volume in the evening, and sit up the greater part of the night to read it, that it might be returned before it was missed the following day. It would have been better, however, had he taken the time in the morning instead. Similar habits of application, and economy both of money and of time, attended him throughout his life, and to them his success must, in great measure, be ascribed.

A SWIMMING EXPLOIT.

A SWIMMING feat was performed, a few years ago, by a native Sandwich woman in peril, which surpasses all other achievements of the kind on record. When about midway between the outmost points of Hawaii and Kahoolawe, or thirty miles from land on either side, a small island vessel, poorly managed, and leaky (as they generally are), suddenly shifted cargo in a strong wind, plunged bows under, and went down, there being on board between thirty and forty persons, and a part of them in the cabin. This was just after dinner on Sunday. The natives that happened to be on deck were at once all together in the waves, with no means of escape but their skill in swimming. A Christian man, by the name of Mauae, who had conducted morning worship and a sabbath service

with the people in the forenoon, now called them round him in the water, and implored help from God for all. Then, as a strong current was setting to the north, making it impossible for them to get to Hawaii, whither they were bound, they all made in different ways for Maui and Kahoolawe.

The captain of the schooner, a foreigner, being unable to swim, was put by his Hawaiian wife on an oar, and the two struck out together for the distant shore; but on Monday morning, having survived the first night, the captain died; and in the afternoon of the same day, his wife landed on Kahoolawe. A floating hatchway from the wreck gave a chance for life to a strong young man and his brother; but the latter perished before the daylight of Monday, while the elder reached the island in safety by eight or nine o'clock. A feeble boy, without any support, swam the same distance of nearly thirty miles, and arrived safe at land before any of the others. Mauae and his wife had each secured a covered bucket for a buoy, and three young men kept them company till evening; but all disappeared, one after another, during the night, either by exhaustion, or getting bewildered and turning another way, or by becoming the prey of sharks.

Monday morning the faithful pair were found alone; and the wife's bucket coming to pieces, she swam without anything till afternoon, when Mauae became too weak to go on. The wife stopped and lomilomied him (a kind of shampooing common here), so that he was able to swim again until Kahoolawe was in full view. Soon, however, Mauae grew so weary that he could not even hold to the bucket, and his faithful wife, taking it from him, bade him cling to the long hair of her head, while she still hopefully held on, gradually nearing the shore! Her husband's hands, however, soon slipped from her hair, too weak to keep their hold, and she tried in vain to rouse him to further effort. She endeavoured, according to the native expression, to *hoolana kona manao*, to make his hope swim, to inspire him with confidence by pointing to the land, and telling him to pray to Jesus; but he could only utter a few broken petitions. Putting his arms, therefore, around her own neck, she held them fast on her bosom with one hand, and still swam vigorously with the other until near nightfall, when herself and her now lifeless burden were within a quarter of a mile from the shore. She had now to contend with the raging surf; and finding the body of her husband, which she had borne so long, stone-dead, she reluctantly cast it off, and shortly after reached the land.

But there she was hardly better off than at sea; for long exposure to the brine had so blinded her eyes that it was some time before she could see; her strength was too much spent to travel, and the spot on which she landed was barren lava on the side of the island opposite to any settlement. Food and water she must find, or die. Provisionally she obtained the latter in a rain that had recently fallen, and that was standing for her in the cups of the rocks. Monday night, Tuesday, Wednesday, and Thursday, came without relief, while she crept on gradually as she could toward the inhabited parts of the island. At last, on Friday morning, when her *manao lana*, her swim-

ming hope, that had held its head so long above the waves, was fast sinking with her failing strength, by a gracious Providence, she discovered a water-melon vine in fruit. Eating one, "her eyes were enlightened," like Jonathan's by the honey; soon after she was found by a party of fishermen, by them cared for, and conducted to their village, and the next day transported by canoe to Lahaina, whence the foundered schooner had sailed just one week before.—*Henry T. Cheever.*

MUSSELS.

EXCELLENT and estimable as many shell-fish are, a few partake of a reputation by no means creditable. There are among them creatures exceedingly obnoxious—poisoners and sickeners. Mussels, above all, have a bad name, yet the quantities of them brought to the London market, and purchased as treats for the poor, are very great. In Edinburgh and Leith about 400 bushels of mussels, that is, about 400,000 individual animals, are used as food in the course of the year. A statement has lately gone the round of the newspapers, to the effect that, during the two months ending November last, no fewer than 330 tons of mussels have been sent by rail from Conway to Manchester, in consequence of the opening of the Chester and Holyhead railway. These were brought in bags, of which sixteen went to a ton, and each bag was sold at from 1s. 6d. to 2s. Yet on many parts of our coasts the mussels remain ungathered, for the people believe them noxious; and every now and then the doctors register authentic cases of poisoning by these shell-fish. Yet the number of persons killed or wounded by this virulent though savoury mollusk is but small, compared with the number of mussel-eaters. One man "musselled," however, makes more noise in the world than a million unharmed; just as the fate of a single victim of a railway accident overpowers all our recollections of the myriads who travel safely every day. Like railways, too, mussels sometimes upset people in batches. In 1827, the town of Leith was thrown into commotion and fearfully frightened, in consequence of the hostile proceedings of a number of these fish-in-armour, who, after having for many years conducted themselves quietly and digestibly in the stomachs of their devourers, suddenly waxed rebellious, and were declared to have insidiously poisoned many hundreds of human beings; though, as with great battles, the number of the fallen was wickedly exaggerated, very few really having been killed, and no more than two score wounded. The victims of these attacks are thrown into convulsions; often partially paralyzed; their skins, in many instances, become covered with nettle-rash. Why such symptoms should supervene has sadly puzzled physicians. No rule seems as yet to have been made out. The chances of safety are a million to one in favour of the eater. A restless night and hideous dreams are likely to be the worst results of his indiscretion.

ACQUAINTANCES.—If a man does not make new acquaintances as he advances through life, he will soon find himself left alone. A man should keep his friendships in constant repair.

Simple Questions scientifically answered.

FROM DR. BREWER'S "GUIDE TO SCIENCE."

Why is rain water soft?—Because it is not impregnated with earths and minerals.

Why is it more easy to wash with soft water than with hard?—Because soft water unites freely with soap, and dissolves it, instead of decomposing it, as hard water does.

Why do wood ashes make hard water soft?—1st, Because the carbonic acid of wood ashes combines with the sulphate of lime in the hard water, and converts it into chalk; and, 2ndly, Wood ashes convert some of the soluble salts of water into insoluble, and throw them down as a sediment; by which the water remains more pure.

Why has rain water such an unpleasant smell, when it is collected in rain-water tub or tank?—Because it is impregnated with decomposed organic matters, washed from roofs, trees, or the casks in which it is collected.

Why does water melt salt?—Because very minute particles of water insinuate themselves into the pores of the salt by capillary attraction, and force the crystals apart from each other.

How does blowing hot foods make them cool?—It causes the air which has been heated by the food to change more rapidly, and give place to fresh cold air.

Why do ladies fan themselves in hot weather?—That fresh particles of air may be brought in contact with their face by the action of the fan; and as every fresh particle of air absorbs some heat from the skin, this constant change makes them cool.

Does a fan cool the air?—No; it makes the air hotter, by imparting to it the heat out of our face: but it cools our face, by transferring its heat to the air.

Why is there always a strong draught through the keyhole of a door?—Because the air in the room we occupy is warmer than the air in the hall; therefore, the air from the hall rushes through the keyhole into the room, and causes a draught.

Why is there always a strong draught under the door, and through the crevices on each side?—Because cold air rushes from the hall, to supply the void in the room caused by the escape of warm air up the chimney, etc.

Why is there always a draught through the window crevices?—Because the external air, being colder than the air of the room we occupy, rushes through the window crevices to supply the deficiency caused by the escape of warm air up the chimney, etc.

If you open the lower sash of a window, there is more draught than if you open the upper sash. Explain the reason of this.—If the lower sash be open, cold external air will rush freely into the room, and cause a great draught inwards: but if the upper sash be open, the heated air of the room will rush out; and, of course, there will be less draught inwards.

By which means is a room better ventilated—by opening the upper or the lower sash?—A room is better ventilated by opening the upper sash; because the hot vitiated air, which always ascends towards the ceiling, can escape more easily.

By which means is a hot room more quickly cooled—by opening the upper or the lower sash?—A hot room is cooled more quickly by opening the lower sash; because the cold air can enter more freely at the lower part of the room than at the upper.

Why does wind dry damp linen?—Because dry wind, like a dry sponge, imbibes the particles of vapour from the surface of the linen, as fast as they are formed.

Which is the hottest place in a church or chapel?—The gallery.

Why is the gallery of all public places hotter than the lower parts of the building?—Because the heated air of the building ascends; and all the cold air which can enter through the doors and windows, keeps to the floor, till it has become heated.

Why do plants often grow out of walls and towers?—Either because the wind blew the seed there with the dust; or else because some bird, flying over, dropped seed there, which it had formerly eaten.

What is a barometer?—A weather glass, or instrument to measure the variations in the weight of the air; by means of which variations we may judge what weather may be expected.

How can a barometer, which measures the weight of air, be of service as a weather glass?—When air is moist or filled with vapour, it is lighter than usual; and the column of mercury stands low. When air is dry and free from vapour, it is heavier than usual; and the mercury stands high. Thus the barometer, by showing the variations in the weight of the air, indicates the changes of the weather also.

Why can you tell, by looking at a barometer, what kind of weather it will be?—Because the mercury in the tube rises and falls, as the air becomes heavier or lighter: and we can generally tell, by the weight of the air, what kind of weather to expect.

Does the weight of the air vary much?—Yes; the atmosphere in England varies as much as one-tenth part more or less.

Why is the barometer highest of all during a long frost?—Because a long frost condenses the air very greatly; and the more condensed air is, the greater is its pressure on the mercury of a barometer.

Why does the barometer generally rise with north-east winds?—Because north-east winds make the air both cold and dry: and being both condensed and without vapour, it is much heavier.

Why does the barometer fall lowest of all, at the breaking up of a long frost?—1st, Because the air, which had been much dried by the frost, absorbs the moisture of the fresh warm current of wind from the south or south-west; and 2ndly, The air, which had been much condensed by the frost, is suddenly expanded by the warm wind which is introduced.

Why does the barometer fall very low with south and west winds?—Because south and west winds come heavily laden with vapour; and vaporized air is lighter than dry air.